Electronic Supplementary Material (ESI) for RSC Advances.

Supporting Information

pH Responsive Translocation of An Anticancer Drug between Cyclodextrin and DNA

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Table S1. Fluorescence transient fittings of EPT (15 μM) in absence and presence of γ-CD (10 mM) and DNA (100 μM) at different pH conditions, collected at respective emission maximum.

Sample	τ_1	a_1	τ_2	a_2	τ_3	a_3	$\langle\tau\rangle^{\#}$	χ^2
pH 7								
EPT at 530	1.99	0.9	5.55	0.1	-	-	2.34	1.1
EPT + γ-CD + DNA at 475	0.78	0.65	5.86	0.11	31.76	0.24	8.76	1
EPT + γ-CD + DNA at 525	-	-	5.47	0.31	19.2	0.69	14.96	1.15
EPT + DNA at 525	-	-	5.56	0.2	15.98	0.8	13.93	1.06
EPT + γ-CD at 475	0.82	0.71	5.74	0.07	36.78	0.22	9.22	1
pH 5								
EPT at 530	1.96	0.83	7.27	0.17	-	-	2.86	1.12
EPT + γ-CD + DNA at 525	-	-	5.93	0.18	16.18	0.82	14.34	1.04
EPT + DNA at 525	-	-	5.59	0.16	15.85	0.84	14.21	1.01
EPT + γ-CD at 475	0.95	0.43	3.46	0.49	22.58	0.08	3.92	1.09
pH 8.5								
EPT at 530	1.93	0.95	6.42	0.05	-	-	2.16	1.29
EPT + γ-CD + DNA at 475	0.8	0.67	5.35	0.09	35.3	0.23	9.27	1.03
EPT + DNA at 525	-	-	4.73	0.26	15.53	0.74	12.74	1.04
EPT + γ-CD at 475	0.83	0.69	6.24	0.08	38.11	0.23	9.79	1.01

$^{\#}\langle\tau\rangle = a_{1*}\,\tau_1 + a_{2*}\,\tau_2 + a_{3*}\,\tau_3$

Table S2. Anisotropy transient fittings of EPT (15 μM) in absence and presence of γ-CD (10 mM) and DNA (100 μM) at different pH conditions, collected at respective emission maximum.

Sample	τ_{1r}	a_1	τ_{2r}	a_2	χ^2
pH 7					
EPT at 530	0.12	-	-	-	1.03
EPT + γ-CD + DNA at 475	0.52	0.68	12.8	0.32	1.04
EPT + γ-CD + DNA at 525	0.5	0.41	18.48	0.59	1.07
EPT + DNA at 525	0.99	0.33	14.57	0.67	1.09
EPT + γ-CD at 475	0.85	-	-	-	1.02
pH 5					
EPT + γ-CD + DNA at 525	0.79	0.32	12.9	0.68	1.14
EPT + DNA at 525	1.15	0.31	13.73	0.69	1.11
EPT + γ-CD at 525	0.22	-	-	-	1.04
pH 8.5					
EPT + γ-CD + DNA at 475	0.96	-	-	-	1.04
EPT + DNA at 525	0.26	0.28	18.5	0.72	1.09
EPT + γ-CD at 475	0.86	-	-	-	1.04

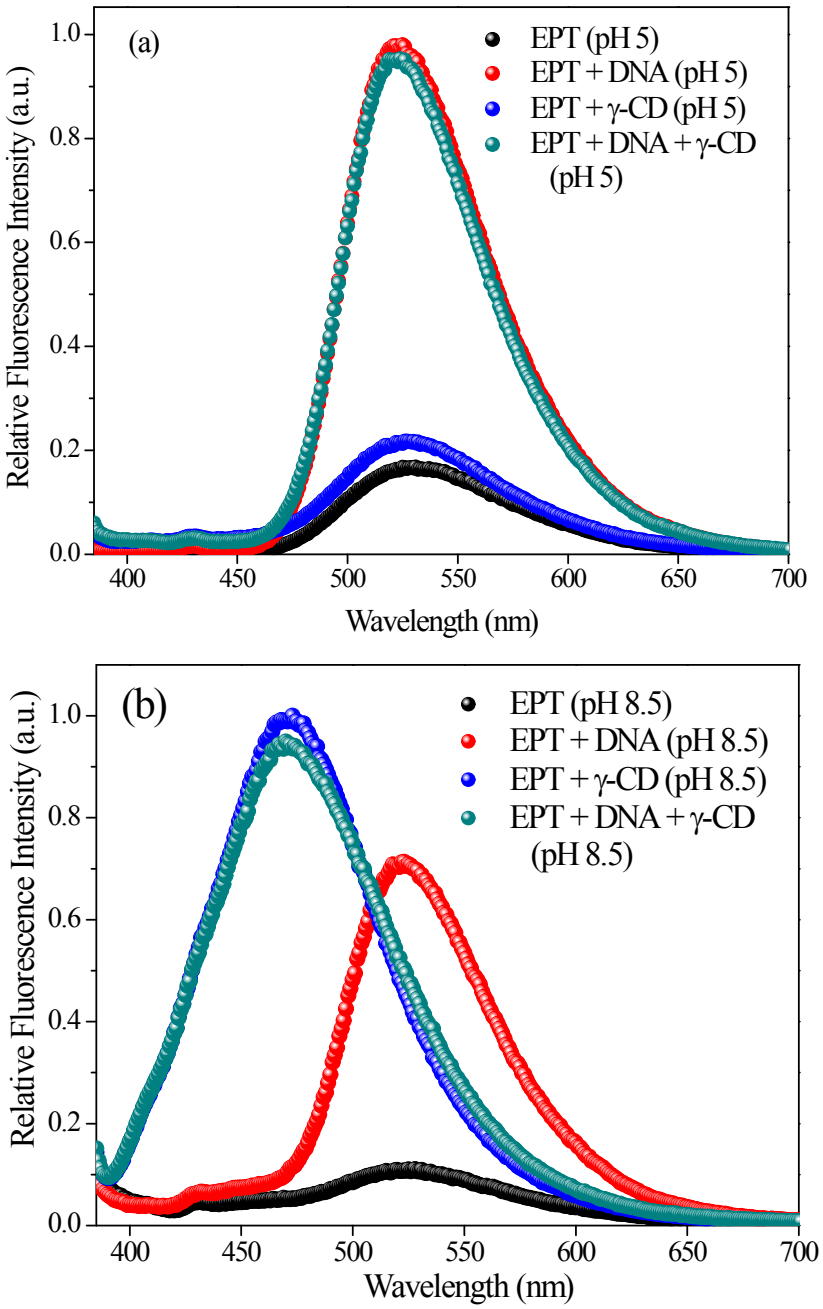

Figure S1. Emission spectra of EPT (15 μM) in absence and presence of γ-CD (10 mM) and DNA (100 μM) at pH (a) 5, and (b) 8.5.

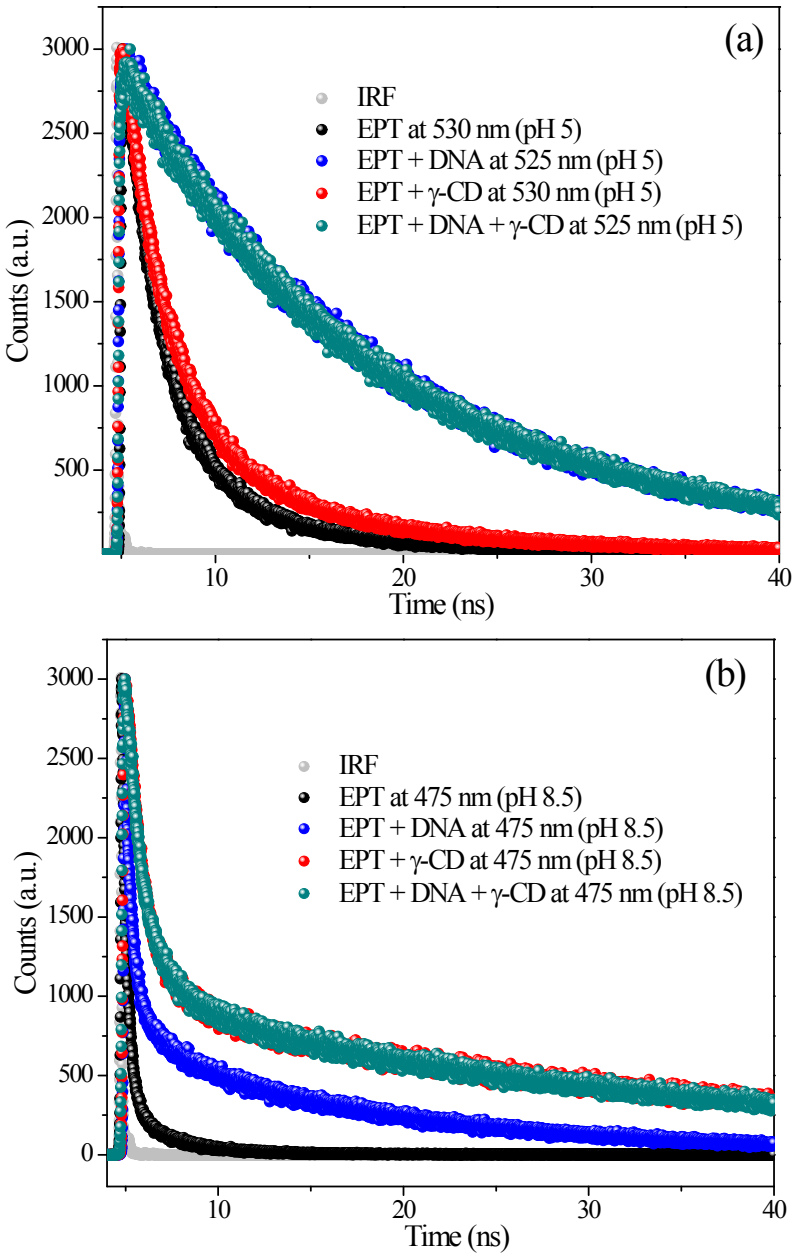

Figure S2. Fluorescence transients of EPT (15 μM) in absence and presence of γ-CD (10 mM) and DNA (100 μM) at pH (a) 5 and (b) 8.5, collected at respective emission maximum.

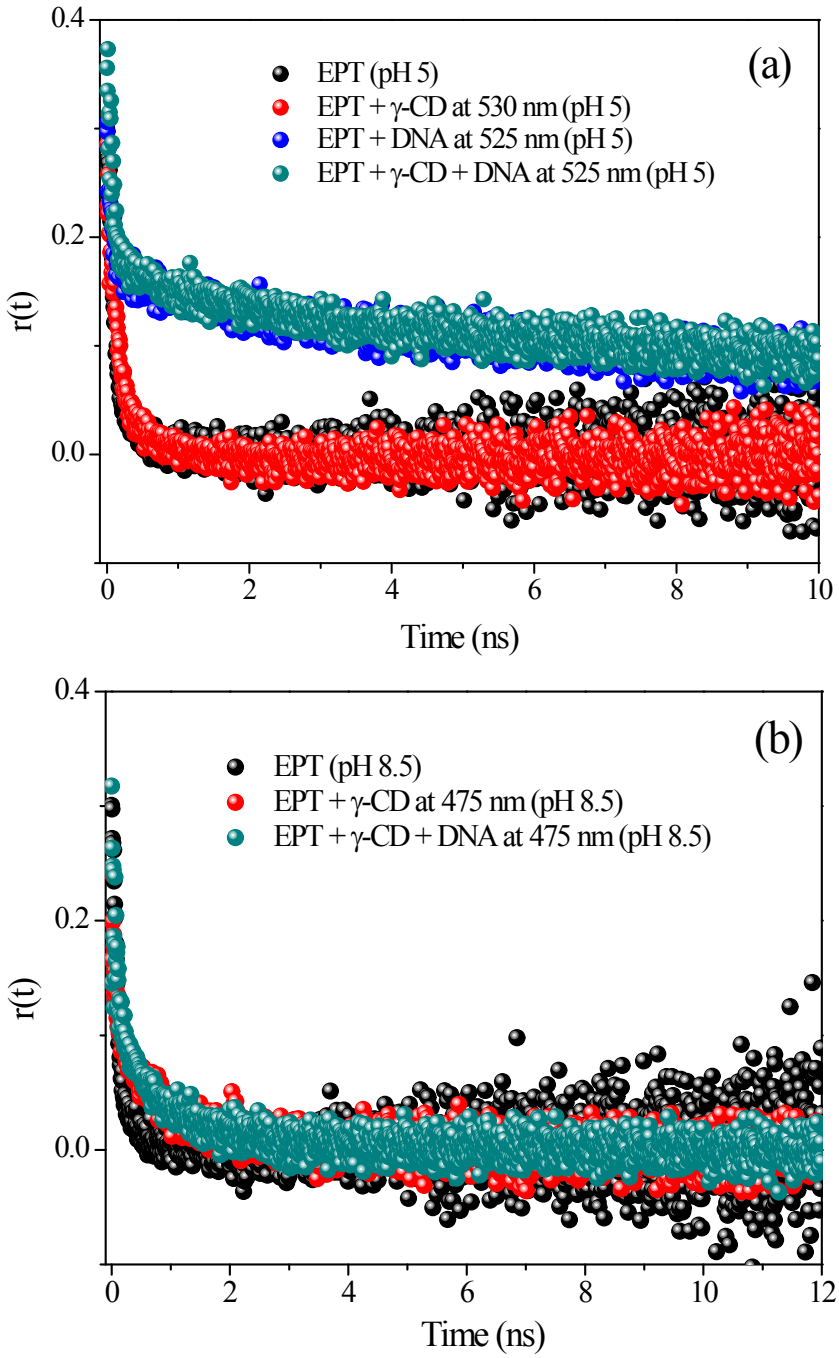

Figure S3. Fluorescence anisotropy transients of EPT (15 μM) in absence and presence of γ-CD (10 mM) and DNA (100 μM) at pH (a) 5 and (b) 8.5, collected at respective emission maximum.

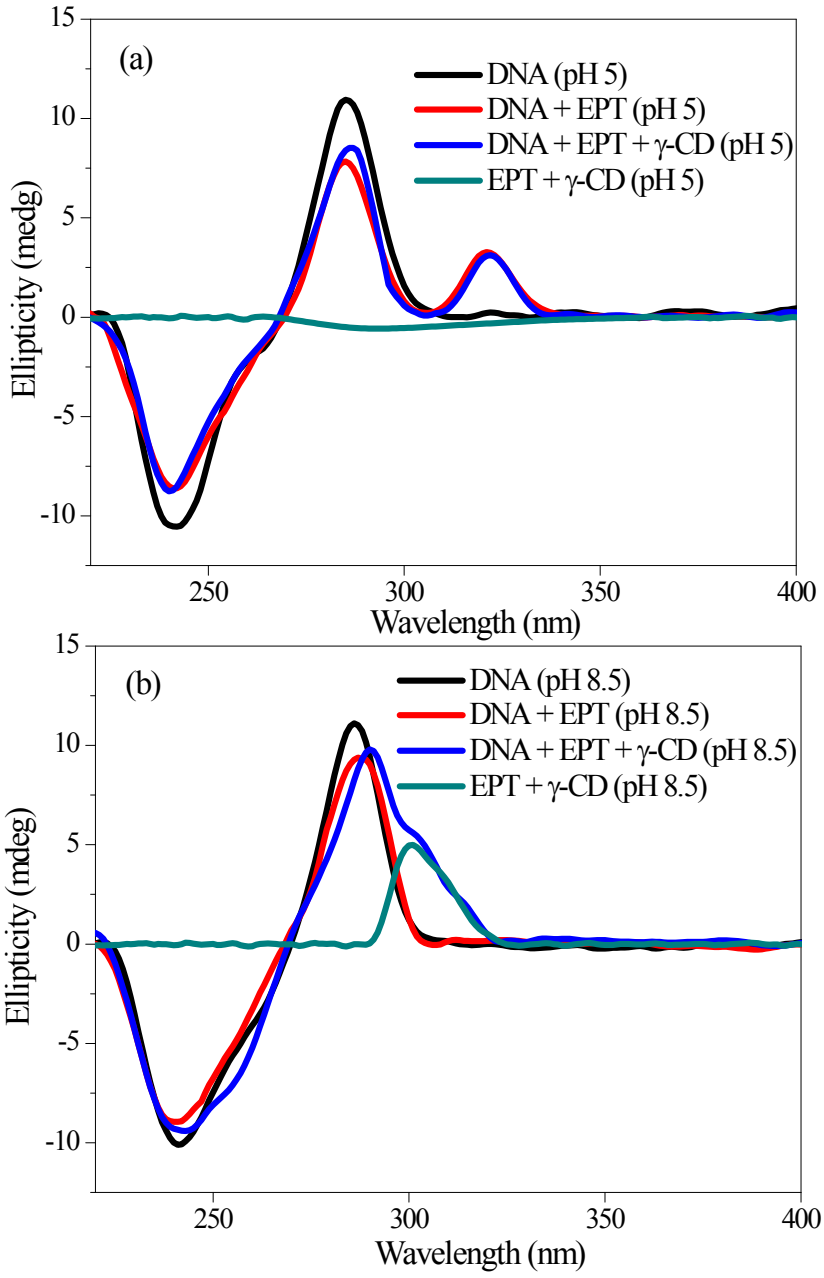

Figure S4. Circular dichroism spectra of DNA (200 μM) in absence and presence of γ-CD (10 mM) and EPT (30 μM) at (a) pH 5 and (b) pH 8.5.